WHAT IS CLAIMED IS:

1. A method for generating a premium for an option, comprising:

providing the average volatility of the asset by employing historical or market data;

providing the volatility of volatility of the asset by employing historical data;

providing the type of distribution for the forward rate based on historical data;

providing a volatility distribution graph based on the selected distribution type, the graph having volatility as the x-axis and probability as the y-axis;

dividing the volatility distribution graph into a plurality of vertical slices, each of said slices corresponding to a volatility, whereby the integration of the graph over the volatility range corresponding to each slice provides a probability for the corresponding volatility;

determining an option premium for each volatility by employing a volatility premium process;

weighing each premium from said determining of premium step by the probability associated with the corresponding volatility as determined from the volatility distribution graph; and

summing all premiums associated with the volatilities to provide a premium for the option.

2. The method of Claim 1, wherein the volatility premium process used to determine the stochastic volatility premium is the Q-model value of a call option on rate r with forward

value $\bar{r}$, strike k, expiration time t, and annualized volatility σ is given by the following formula:

$$BSQ(\bar{r},c,\sigma,t) = \bar{r}\tfrac{1}{q}\cdot\Phi(d_1)+\bar{r}(1-\tfrac{1}{q}-\widetilde{k})\cdot\Phi(d_2)$$

where Φ is the normal cumulative inverse function and

$\widetilde{k} = k/\bar{r}$

$\widetilde{x} = -\tfrac{1}{q}\ln[(\widetilde{k}-1)q+1]/(\sigma\sqrt{t})$

$d_1 = \widetilde{x}+\tfrac{1}{2}q\sigma\sqrt{t}$

$d_2 = \widetilde{x}-\tfrac{1}{2}q\sigma\sqrt{t}$

3. The method of Claim 1, further comprising performing an inverse Black procedure to determine the conventional market implied volatility for a strike rate that is different from the forward rate.